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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/749,388	12/28/2000	Yuki Hidaka	1422-0454P	5562
2292	7590	11/17/2003	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			SHOSHO, CALLIE E	
			ART UNIT	PAPER NUMBER
			1714	

DATE MAILED: 11/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/749,388	Applicant(s) HIDAKA ET AL.	
	Examiner Callie E. Shosho	Art Unit 1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 23 July 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-11, 13, 14 and 16-23 is/are rejected.
- 7) ☒ Claim(s) 7, 12 and 15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                       | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                              | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>5/9/03</u> . | 6) <input type="checkbox"/> Other:  |

**DETAILED ACTION**

1. All outstanding rejections except for those described below are overcome by applicants' amendment filed 7/23/03.

The new grounds of rejection as set forth below are necessitated by applicants' amendment and thus, the following action is final.

**Claim Rejections - 35 USC § 112**

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 11, 14, and 22 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

(a) With respect to claims 11 and 14, it is noted that in response to examiner's 35 USC 112, second paragraph rejection as set forth in paragraph 3 of the office action mailed 1/23/03 indicating that the scope of claims 11 and 14 was confusing because it is not clear what type of molecular weight was referred to in these claims – weight average, number average, etc., applicants have amended claim 11 to recite that the "acrylic polymer side chain (P) has number

average molecular weight 300 to 20,000” and claim 14 to recite that the “nonionic polymer side chain (R) has number average molecular 300 to 10,000”.

While examiner appreciates applicants response to the rejection, it is the examiner's position that this phrase fails to satisfy the written description requirement under the cited statute since there does not appear to be a written description requirement of the phrase “number average molecular weight” with respect to the acrylic polymer side chain or nonionic polymer side chain in the application as originally filed, *In re Wright*, 866 F.2d 422, 9 USPQ2d 1649 (Fed. Cir. 1989) and MPEP 2163. Applicant has not pointed to any portion of the specification and examiner has not found any support for this phraseology in the specification as originally filed.

(b) With respect to new claim 22, the claim recites that said at least one monomer is “not an aromatic monomer”.

The cited phraseology clearly signifies a “negative” or “exclusionary” limitation for which the applicants have no support in the original disclosure. Negative limitations in a claim which do not appear in the specification as filed introduce new concepts and violate the description requirement of 35 USC 112, first paragraph, *Ex Parte Grasselli, Suresh, and Miller*, 231 USPQ 393, 394 (Bd. Pat. App. and Inter. 1983); 783 F. 2d 453. The insertion of the above phraseology as described above positively excludes aromatic monomers, however, there is no support in the present specification for such exclusions. Applicant has not pointed to any portion of the specification and examiner has not found any support for this phraseology in the specification as originally filed.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 22 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 22 recites that the acrylic polymer side chain (P) is made of "at least one monomer" represented by the formula  $\text{CH}_2=\text{C}(\text{R}^1)\text{COOR}^2$  and further recites "wherein said at least one monomer is not an aromatic monomer". However, given that  $\text{R}^1$  is hydrogen or alkyl group and  $\text{R}^2$  is alkyl group, it is does not appear that the monomer of formula (1) can be an aromatic monomer. Thus, the recitation that the monomer is "not an aromatic monomer" is not understood. Clarification is requested.

**Claim Rejections - 35 USC § 102**

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claims 1-4, 10-11, 13, 16-18, and 21-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Anton et al. (U.S. 6,005,023) taken in view of the evidence in Satake et al. (U.S. 5,814,685).

The rejection is adequately set forth in paragraph 6 of the office action mailed 1/23/03 and is incorporated here by reference.

Further, it is noted that col.col.3, lines 25-30 and col.4, lines 46-49 of Anton et al. disclose that the side chain of the graft copolymer is a macromonomer that preferably comprises 50-80% methyl methacrylate, which corresponds to the monomer of presently claimed formula (1), and 20-50% methacrylic acid.

Although there is no disclosure of the glass transition temperature of the side chain, it is well known, as evidenced by Satake et al. (col.4, lines 4-10, 39, and 51) that glass transition temperature (T<sub>g</sub>) of polymer is calculated based on the type and amounts of monomers from which the polymer was obtained. Based on the glass transition temperatures of methyl methacrylate (T<sub>g</sub> = 105 °C) and methacrylic acid (T<sub>g</sub> = 130 °C) and assuming side chain comprises 60% methyl methacrylate and 40% methacrylic acid (amounts which fall both within the scope of the claims and the amounts disclosed by Anton et al.), it is calculated that the side chain possesses T<sub>g</sub> of approximately 114 °C.

In light of the above, it is clear that Anton et al. anticipate the present claims.

**Claim Rejections - 35 USC § 103**

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
9. Claims 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anton et al. (U.S. 6,005,023) in view of Tone et al. (U.S. 5,336,725).

The rejection is adequately set forth in paragraph 8 of the office action mailed 1/23/03 and is incorporated here by reference.

10. Claims 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anton et al. (U.S. 6,005,023) in view of either Nguyen et al. (U.S. 6,057,384) or Razavi et al. (U.S. 5,629,365).

The rejection is adequately set forth in paragraph 9 of the office action mailed 1/23/03 and is incorporated here by reference.

11. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Anton et al. (U.S. 6,005,023) in view of Yui et al. (U.S. 5,977,207).

The rejection is adequately set forth in paragraph 10 of the office action mailed 1/23/03 and is incorporated here by reference.

12. Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anton et al. (U.S. 6,005,023).

The rejection is adequately set forth in paragraph 12 of the office action mailed 1/23/03 and is incorporated here by reference.

**Response to Arguments**

13. Applicants' arguments regarding Ma et al. (U.S. 6,117,921) and Beach et al. (U.S. 5,589,522) have been considered but they are moot in view of the discontinuation of these references against the present claims.

14. Applicants' arguments filed 7/23/03 have been considered but, with the exception of arguments relating to Ma et al. and Beach et al., they are not persuasive.

Specifically, applicants argue that Anton et al. do not disclose graft copolymer having hydrophilic backbone and hydrophobic side chain as presently claimed but rather Anton et al. disclose hydrophobic backbone and hydrophilic side chain. Applicants also argue that Anton et al. fail to disclose or suggest claimed side chain comprised of the monomer of formula (1) as well as monomer content of the claimed graft copolymer.

However, it is noted that the present claims do not require that the graft copolymer has hydrophilic backbone and hydrophobic side chain.

Rather, the present claims require graft copolymer comprising acrylic polymer side chain consisting essentially of at least one monomer of the formula  $\text{CH}_2=\text{C}(\text{R}^1)\text{COOR}^2$  wherein the monomer is present in the side chain in an amount of not less than 60%.

It is noted that col.3, lines 25-30 of Anton et al. disclose that the graft copolymer comprises side chain that is hydrophilic macromonomer comprising 2-100% ethylenically unsaturated acid containing monomer while col.4, lines 46-49 of Anton et al. disclose that a "preferred" macromonomer comprises 50-80% methyl methacrylate and 20-50% methacrylic acid. It is noted that methyl methacrylate is identical to the monomer of presently claimed



formula (1) when both R<sup>1</sup> and R<sup>2</sup> are methyl groups and that the amount of methyl methacrylate, i.e. 50-80%, overlaps the amount, i.e. not less than 60%, presently claimed.

Thus, it is the examiner's position that given that Anton et al. disclose side chain comprising 50-80% methyl methacrylate, Anton et al. meets the requirements of the present claims regarding both type and amount of monomer.

It is noted that present claim 1 has been amended to recite that the acrylic polymer side chain (P) is a (co)polymer "consisting essentially of.". However, while it is recognized that the phrase "consisting essentially of" narrows the scope of the claims to the specified materials and those which do not materially affect the basic and novel characteristics of the claimed invention, absent a clear indication of what the basic and novel characteristics are, "consisting essentially of" is construed as equivalent to "comprising". Further, the burden is on the applicant to show any additional ingredients in the prior art would in fact be excluded from the claims and that such ingredients would materially change the characteristics of the applicant's invention. See MPEP 2111.03.

**Allowable Subject Matter**

15. Claims 7, 12, and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 7, 12, and 15 would be allowable if rewritten in independent form as described above given that the "closest" prior art, namely, Anton et al. (U.S. 6,005,023) does not disclose (i) graft copolymer prepared as required in present claim 7, (ii) that the side chain is polylauryl

methacrylate or polyisobutyl methacrylate (claim 12), or (iii) the amount of nonionic polymer side chain (claim 15).

**Conclusion**

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 703-305-0208. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

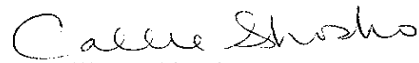
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 703-306-2777. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Callie E. Shosho  
Primary Examiner  
Art Unit 1714

CS

10/31/03